



STIC Search Report

EIC 1700

STIC Database (Search Date: 11/13/2013) (10/28/2013)

TO: Sin J Lee
Location: REM 9D60
Art Unit : 1752
May 12, 2005

Case Serial Number: 10/728801

From: Usha Shrestha
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-3519
usha.shrestha@uspto.gov

Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* Example: 1713
- *Relevant prior art found, search results used as follows:*
- 102 rejection
 - 103 rejection
 - Cited as being of interest.
 - Helped examiner better understand the invention.
 - Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- Foreign Patent(s)
- Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- Results verified the lack of relevant prior art (helped determine patentability).
- Results were not useful in determining patentability or understanding the invention.

Comments:

Priority
X✓

Access DB# 152994

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee

Examiner #: 76060 Date: 5-10-05

Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 101728,801

Mail Box and Bldg/Room Location: 7D64 Results Format Preferred (circle): PAPER DISK E-MAIL
(lim.)

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Bib attached

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for the polysiloxazane ~~PTD~~
having, over its main repeating unit,
those units shown in Cl. # 1
(any one of those circled ones)

Searcher Phone #: _____

AA Sequence (#) _____

Dialog _____

Searcher Location: _____

Structure (#) 1

Questel/Orbit _____

Date Searcher Picked Up: 5/12/05

Bibliographic _____

Dr.Link _____

Date Completed: 5/12/05

Litigation _____

Lexis/Nexis _____

Searcher Prep & Review Time: 40

Fulltext _____

Sequence Systems _____

Clerical Prep Time: 30

Patent Family _____

WWW/Internet _____

Online Time: 120

Other _____

Other (specify) _____

Serial No. 10/728,801
Filed: December 8, 2003

Subm. X
Search

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A photosensitive polysilazane composition comprising a polysilazane or its modification product and a photoacid generator, wherein said polysilazane or its modification product is

~~a polysiloxazane~~ having a number-average molecular weight of between 300 to 100,000 that contains, as its main repeating unit, $-(RSi(NR^6)_{1.6})-$, $-(RSi(NR^6)O_{0.5})-$, $-(RSi(NR^6)_{0.5}O)-$, $-(RSiO_{1.5})-$ or $-(SiO_2)-$, wherein R and R⁶ respectively and independently represent a hydrogen atom, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, and alkylamino group or an alkylsilyl group, or

a polysilazane having a number-average molecular weight of between 100 to 100,000, that mainly contains the skeleton represented with the following general formula (II),



wherein R⁴ and R⁵ respectively and independently represent a hydrogen atom, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, a group other than these groups in which the portion bonded directly to the silicon or nitrogen is carbon, an alkylsilyl group, alkylamino group or an alkoxy group, and n is an arbitrary integer, and wherein

said photoacid generator is at least one type of compound selected from the group consisting of a peroxide and a nitrobenzyl ester.

2. (original) The photosensitive polysilazane composition according to claim 1 wherein said polysilazane is a polysilazane having a number average molecular weight of 100 to 100,000 that mainly contains the skeleton represented by general formula (II).



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1430
 Alexandria, Virginia 22313-1450
www.uspto.gov

BIBDATASHEET

Bib Data Sheet

CONFIRMATION NO. 8923

SERIAL NUMBER 10/728,801	FILING DATE 12/08/2003 RULE	CLASS 430	GROUP ART UNIT 1752	ATTORNEY DOCKET NO. FN4104US-CIP
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APPLICANTS

Tatsuro Nagahara, Kakegawa-shi, JAPAN;
 Hideki Matsuo, Kakegawa-shi, JAPAN;
 Tomoko Aoki, Kakegawa-shi, JAPAN; Kazuhiro Yamada, Tochigi-ken, JAPAN;

**** CONTINUING DATA *******

This application is a CIP of 09/806,852 06/18/2001 ABN * S JL
 (*)Data provided by applicant is not consistent with PTO records.

**** FOREIGN APPLICATIONS *******

JAPAN 10-282697 10/05/1998 S JL
 JAPAN PCT/JP99/05498 10/05/1999

IF REQUIRED, FOREIGN FILING LICENSE GRANTED

** 01/16/2004

Foreign Priority claimed	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	STATE OR COUNTRY	SHEETS	TOTAL	INDEPENDENT
35 USC 119 (a-d) conditions met	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance	JAPAN	DRAWING 3	CLAIMS 19	CLAIMS 2
Verified and Acknowledged	Examiner's Signature _____ Initials _____				

ADDRESS

Alan P. Kass
 Clariant Corporation
 70 Meister Avenue
 Somerville , NJ
 08876

TITLE

Photosensitive polysilazane composition and method of forming patterned polysilazane film

 All Fees 1.16 Fees (Filing)

=> fil reg
FILE 'REGISTRY' ENTERED AT 13:41:47 ON 12 MAY 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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COPYRIGHT (C) 2005 American Chemical Society (ACS)

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FILE 'HCAPLUS' ENTERED AT 10:12:48 ON 12 MAY 2005
L1 2 S US20040081912/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 10:14:00 ON 12 MAY 2005
L2 14 S E1-E14

FILE 'LREGISTRY' ENTERED AT 12:12:49 ON 12 MAY 2005
L3 STR

FILE 'REGISTRY' ENTERED AT 12:15:41 ON 12 MAY 2005
L4 50 S L3
L5 SCR 2043
L6 50 S L3 AND L5
L7 2048 S L3 AND L5 FUL
SAV L7 LEE801/A
L8 STR L3
L9 13 S L8 SAM SUB=L7
L10 277 S L8 FUL SUB=L7
L11 5 S L7 AND L2

FILE 'HCAPLUS' ENTERED AT 12:50:39 ON 12 MAY 2005
L12 147 S L10
L13 1273 S L7
L14 149 S L13(L) ?RESIST?
L15 25 S L14 AND PHOTO?/SC, SX
L16 29 S L12(L) ?RESIST?
L17 6 S L16 AND PHOTO?/SC, SX

FILE 'REGISTRY' ENTERED AT 13:08:47 ON 12 MAY 2005
L18 1771 S L7 NOT L10

FILE 'HCAPLUS' ENTERED AT 13:09:23 ON 12 MAY 2005
L19 1164 S L18
L20 129 S L19(L) ?RESIST?
L21 22 S L20 AND PHOTO?/SC, SX
L22 25 S L17 OR L15
L23 49 S L12 AND ?RESIST?
L24 9 S L23 AND PHOTO?/SC, SX
L25 19 S L21 NOT L24

FILE 'REGISTRY' ENTERED AT 13:39:50 ON 12 MAY 2005

FILE 'HCAPLUS' ENTERED AT 13:40:22 ON 12 MAY 2005

FILE 'REGISTRY' ENTERED AT 13:41:47 ON 12 MAY 2005

=> d que l12
L3 STR

G1~ Si~ N~ G1	Ak~ N	Ak~ Si	O~ Ak
3 1 2 4	@5 @6	@7 @8	@9 @10

VAR G1=H/AK/CB/5/6/7/8/9/10

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L5 SCR 2043

L7 2048 SEA FILE=REGISTRY SSS FUL L3 AND L5

L8 STR

11

O

~

G1~ Si~ N~ G1	Ak~ N	Ak~ Si	O~ Ak
3 1 2 4	@5 @6	@7 @8	@9 @10

VAR G1=H/AK/CB/5/6/7/8/9/10

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L10 277 SEA FILE=REGISTRY SUB=L7 SSS FUL L8

L12 147 SEA FILE=HCAPLUS ABB=ON PLU=ON L10

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 13:42:15 ON 12 MAY 2005

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=> d 124 1-9 ibib abs hitstr hitind

L24 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:861932 HCAPLUS

DOCUMENT NUMBER: 134:30180

TITLE: Method for forming polyimide pattern using
photosensitive polyimide composition

INVENTOR(S): Itatani, Hiroshi; Matsumoto, Shunichi;
Itatani, Tarou; Sakamoto, Tsunenori;

Gorwadkar, Sucheta; Komuro, Masanori

PATENT ASSIGNEE(S): PI R and D Co., Ltd., Japan

SOURCE: PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT:

1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000073853	A1	20001207	WO 2000-JP73853	2000 0531
JP 2003098667	A2	20030404	JP 1999-189469	1999 0531
WO 2000073853	A1	20001207	WO 2000-JP3502	2000 0531
EP 1199604	A1	20020424	EP 2000-935501	2000 0531
US 6777159	B1	20040817	US 2002-980212	2002 0318
PRIORITY APPLN. INFO.:			JP 1999-189469	A 1999 0531
			JP 2000-105593	A 2000 0216
			WO 2000-JP3502	W 2000 0531

AB A pos.-type photosensitive polyimide composition comprises a photolytically acid-generating agent and a solvent-soluble polyimide which is obtained by polycondensation of ≥ 1 aliphatic tetracarboxylic dianhydride and/or alicyclic tetracarboxylic dianhydride (e.g., cis-1,2,3,4-cyclopentanetetracarboxylic dianhydride) with ≥ 1 aliphatic tetracarboxylic acid diamine and/or alicyclic tetracarboxylic acid diamine [e.g., 1,3-bis(3-aminopropyl)tetramethyldisiloxane], and exhibits pos.-type photosensitivity in the presence of the photolytically acid generating agent. A method for forming a neg.-type polyimide pattern comprises irradiating an electron beam to a coating of the above polyimide in the absence of the photolytically acid-generating agent.

IT 311773-07-6P 311773-11-2P
(method for forming polyimide pattern using photosensitive

polyimide composition)

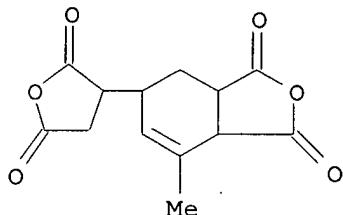
RN 311773-07-6 HCPLUS

CN 1H, 3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with
1,3-disiloxanediamine, 2,2'-dithiobis[ethanamine],
3a,4,5,7a-tetrahydro-7-methyl-5-(tetrahydro-2,5-dioxo-3-furanyl)-
1,3-isobenzofurandione and 2,4,8,10-tetraoxaspiro[5.5]undecane-3,9-
dipropanamine (9CI) (CA INDEX NAME)

CM 1

CRN 73003-90-4

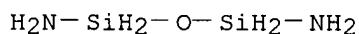
CMF C13 H12 O6



CM 2

CRN 71134-22-0

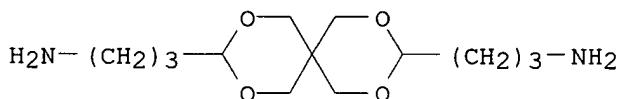
CMF H8 N2 O Si2



CM 3

CRN 21587-74-6

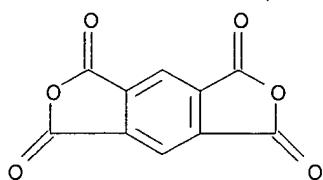
CMF C13 H26 N2 O4



CM 4

CRN 89-32-7

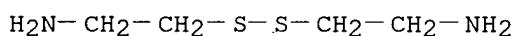
CMF C10 H2 O6



CM 5

CRN 51-85-4

CMF C4 H12 N2 S2



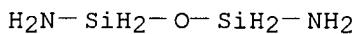
RN 311773-11-2 HCPLUS

CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
 3a,4,4a,7a,8,8a-hexahydro-, polymer with 1,3-
 cyclohexanedimethanamine, 1,3-disiloxanediamine,
 2,2'-dithiobis[ethanamine] and rel-(3aR,3bS,6aS,7aR)-tetrahydro-1H-
 cyclopenta[1,2-c:3,4-c']difuran-1,3,4,6(3aH)-tetrone (9CI) (CA
 INDEX NAME)

CM 1

CRN 71134-22-0

CMF H8 N2 O Si2

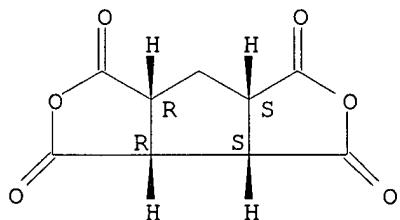


CM 2

CRN 4802-47-5

CMF C9 H6 O6

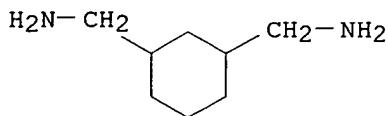
Relative stereochemistry.



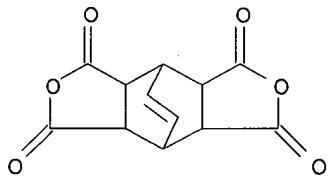
CM 3

CRN 2579-20-6

CMF C8 H18 N2



CM 4

CRN 1719-83-1
CMF C12 H8 O6

CM 5

CRN 51-85-4
CMF C4 H12 N2 S2 $\text{H}_2\text{N}-\text{CH}_2-\text{CH}_2-\text{S}-\text{S}-\text{CH}_2-\text{CH}_2-\text{NH}_2$

IC G03F007-037; C08G073-10; C08L079-08
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37, 73, 74
 IT Electron beams
 Negative **photoresists**
 Optical materials
 Photolithography
 Polymerization
 Polymerization catalysts
 Positive **photoresists**
 (method for forming polyimide pattern using photosensitive
 polyimide composition)
 IT 311773-04-3P 311773-05-4P 311773-06-5P **311773-07-6P**
 311773-08-7P 311773-09-8P 311773-10-1P **311773-11-2P**
 311773-12-3P 311773-13-4P 311773-14-5P
 (method for forming polyimide pattern using photosensitive
 polyimide composition)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L24 ANSWER 2 OF 9 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:271577 HCPLUS
 DOCUMENT NUMBER: 130:289209
 TITLE: Polyimide composition for positive
photoresist

INVENTOR(S): Itatani, Hiroshi; Matsumoto, Shunichi
 PATENT ASSIGNEE(S): PI R & D Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 112 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9919771	A1	19990422	WO 1998-JP4577	1998 1012
				W: CN, JP, KR, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
EP 1024407	A1	20000802	EP 1998-947813	1998 1012
				R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
US 6627377	B1	20030930	US 2000-529382	2000 0626
PRIORITY APPLN. INFO.:			JP 1997-315781	A 1997 1013
			JP 1997-320266	A 1997 1016
			JP 1997-353987	A 1997 1117
			JP 1997-353988	A 1997 1117
			JP 1997-363044	A 1997 1125
			JP 1997-363045	A 1997 1125
			JP 1997-363378	A 1997 1126
			JP 1997-365491	A 1997 1202
			JP 1997-370187	A

1997
1222

JP 1998-31933 A
1998
0105

JP 1998-108410 A
1998
0316

JP 1997-352987 A
1997
1117

WO 1998-JP4577 W
1998
1012

AB A photosensitive polyimide composition is soluble in organic solvents, excellent in adhesiveness, heat **resistance**, mech. characteristics and flexibility, and is capable of exhibiting alkali-soluble, highly sensitive pos. **photoresist** characteristics upon irradiation with light. The composition comprises a photo-acid generator and a solvent soluble polyimide exhibiting pos. photosensitivity in the presence of the generator.

IT 222843-06-3P, 3,4,3',4'-Biphenyltetracarboxylic acid dianhydride-3,4,3',4'-benzophenonetetracarboxylic acid dianhydride-2,4-diaminotoluene-diaminosiloxane-3,4-diaminodiphenyl ether-2,2-bis[4-(4-aminophenoxy)phenyl]hexafluoropropylene block copolymer

(polyimide composition for pos. **photoresist**)

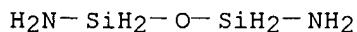
RN 222843-06-3 HCPLUS

CN [5,5'-Biisobenzofuran]-1,1',3,3'-tetrone, polymer with, 5,5'-carbonylbis[1,3-isobenzofurandione], 1,3-disiloxanediamine, 4-methyl-1,3-benzenediamine, 4,4'-oxybis[1,2-benzenediamine] and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)bis[benzenamine], block (9CI) (CA INDEX NAME)

CM 1

CRN 71134-22-0

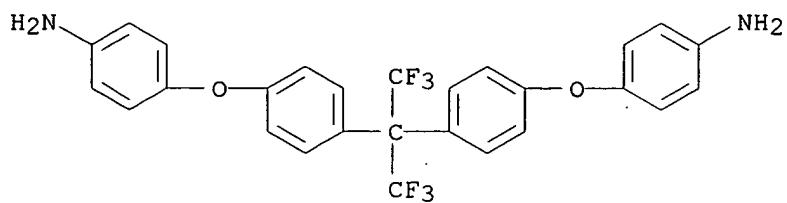
CMF H8 N2 O Si2



CM 2

CRN 69563-88-8

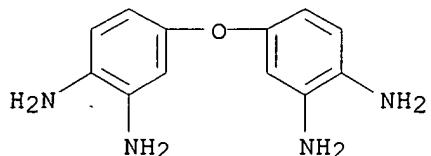
CMF C27 H20 F6 N2 O2



CM 3

CRN 2676-59-7

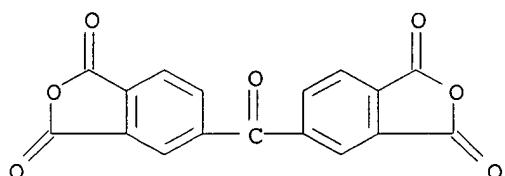
CMF C12 H14 N4 O



CM 4

CRN 2421-28-5

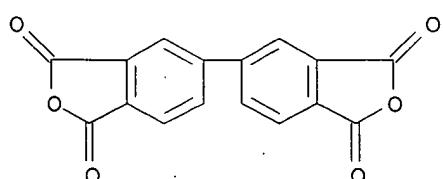
CMF C17 H6 O7



CM 5

CRN 2420-87-3

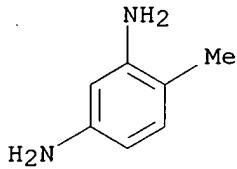
CMF C16 H6 O6



CM 6

CRN 95-80-7

CMF C7 H10 N2



IC ICM G03F007-039
 ICS G03F007-022; G03F007-004; C08L079-08; C09D179-08; C08G073-10;
 H05K003-28; H05K003-46; H01L021-027
 CC 74-5 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35
 ST polyimide compn pos **photoresist**
 IT Positive **photoresists**
 (polyimide composition for pos. **photoresist**)
 IT Polyimides, uses
 (polyimide composition for pos. **photoresist**)
 IT 15499-84-0P
 (polyimide composition for pos. **photoresist**)
 IT 80180-96-7P, 3,3',4,4'-Benzophenonetetracarboxylic
 dianhydride-2,4-diaminotoluene-3,3'-dimethoxy-4,4'-diaminobiphenyl
 copolymer 87182-96-5P, 2,2-Bis[4-(4-
 aminophenoxy)phenyl]hexafluoropropane-4,4'-[2,2,2-trifluoro-1-
 (trifluoromethyl)ethylidene]bis(1,2-benzeneddicarboxylic acid
 dianhydride) copolymer 134096-63-2P 144279-09-4P
 162735-41-3P 177190-29-3P 177190-34-0P 186967-17-9P
 222842-97-9P, 3,4,3',4'-Biphenyltetracarboxylic acid
 dianhydride-2,2-bis[4-(4-aminophenoxy)phenyl]propane-2,3-
 diaminodiphenyl ether copolymer 222843-01-8P
222843-06-3P, 3,4,3',4'-Biphenyltetracarboxylic acid
 dianhydride-3,4,3',4'-benzophenonetetracarboxylic acid
 dianhydride-2,4-diaminotoluene-diaminosiloxane-3,4-diaminodiphenyl
 ether-2,2-bis[4-(4-aminophenoxy)phenyl]hexafluoropropane block
 copolymer 222843-27-8P, m-BAPS-3,4,3',4'-
 benzophenonetetracarboxylic acid dianhydride-9,9-bis(4-
 aminophenyl)fluorene-3,4,3',4'-Biphenyltetracarboxylic acid
 dianhydride-3,5-diaminobenzoic acid block copolymer 222843-32-5P
 222843-36-9P, 3,4,3',4'-Benzophenonetetracarboxylic Acid
 Dianhydride-4,4'-diaminodiphenylsulfide-3,4,3',4'-biphenyl
 tetracarboxylic Acid Dianhydride-3,3'-dihydroxybenzidine-m-BAPS
 block copolymer 222843-50-7P 222843-56-3P 222843-63-2P
 222843-70-1P 222843-77-8P 222843-82-5P 222843-88-1P
 222843-94-9P 222843-98-3P 222844-05-5P 222844-10-2P
 222844-17-9P 222844-25-9P 222844-32-8P 222844-44-2P
 222844-51-1P 222844-59-9P 222844-67-9P 222844-73-7P,
 3,3',4,4'-Biphenyltetracarboxylic dianhydride; diaminosilane;
 γ -valerolactone; 3,4,3',4'-benzophenonetetracarboxylic
 dianhydride; 3,3'-dihydroxy-4,4'-diaminobiphenyl;
 3,4'-diaminodiphenyl ether block copolymer 222844-82-8P
 222844-87-3P 222844-93-1P 222844-96-4P 222845-03-6P
 222845-07-0P, 3,3',4,4'-Benzophenonetetracarboxylic acid
 dianhydride-3,3'-dinitro-4,4'-diaminodiphenyl-bis[4-(3-
 Aminophenyl)phenyl]sulfone copolymer 222845-11-6P 222845-17-2P
 222845-23-0P 222845-26-3P 222845-32-1P 222845-38-7P,

3,3',4,4'-Biphenyltetracarboxylic acid anhydride-1,5-diaminoanthraquinone-2,2-bis[4-(3-aminophenoxy)phenyl]propane copolymer 222845-43-4P 222845-53-6P 222845-58-1P
 222845-63-8P 222845-68-3P, 3,3',4,4'-Benzophenonetetracarboxylic acid dianhydride-1,4-bis(3-aminopropyl)piperazine-bis[4-(3-aminophenoxy)phenyl]sulfone copolymer 222845-73-0P
 222845-77-4P 222845-83-2P 222845-89-8P 222845-95-6P
 222846-01-7P 222846-08-4P 222846-13-1P 222846-18-6P
 222846-23-3P, 3,3',4,4'-Biphenyltetracarboxylic acid dianhydride-bis-4-(3-aminophenoxy)phenylsulfone-2,2-bis-[4-(3-aminophenoxy)phenyl]hexafluoropropane copolymer 222846-30-2P
 222846-54-0P 222846-63-1P 222846-79-9P 222846-83-5P
 222846-88-0P, 3,4,3',4'-Biphenyltetracarboxylic acid dianhydride-2,2-ditrifluoromethylbenzidine-2,2-bis[4-(4-aminophenoxy)phenyl]propane-3,5-diaminobenzoic acid block copolymer 222846-93-7P
 (polyimide composition for pos. photoresist)

IT 86-73-7, Fluorene

(polyimide composition for pos. photoresist)

IT 83803-86-5 222843-16-5, m-BAPS-3,3'-dimethylbenzidine-4,4'-(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene)bis(1,2-benzenedicarboxylic acid dianhydride) copolymer 222843-21-2, m-BAPS-bicyclo(2,2,2)-octa-7-ene-2,3,5,6-tetracarboxylic acid dianhydride-pyromellitic acid dianhydride copolymer 222843-41-6, 2,2-Bis[4-(4-aminophenoxy)phenyl]propane-3,4,3',4'-Biphenyltetracarboxylic dianhydride-3,5-diaminobenzoic acid-pyromellitic acid dianhydride-2,2'-bis(trifluoromethyl)benzidine block copolymer

(polyimide composition for pos. photoresist)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1998:695258 HCAPLUS
 DOCUMENT NUMBER: 130:66817
 TITLE: Poly(siloxylethylene glycol) as a new candidate for a functional organosilicon polymers
 AUTHOR(S): Aoki, Hidetoshi; Nagasaki, Yukio
 CORPORATE SOURCE: R & D Center, Hokushin Corporation, Yokohama, 230, Japan
 SOURCE: Current Trends in Polymer Science (1997), 2, 83-94
 CODEN: CTSCFK
 PUBLISHER: Research Trends
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English
 AB A review with 51 refs. on the synthesis and unique properties of poly(siloxylethylene glycol) (PSEG). PSEG, an alternating oligo(dimethylsiloxane)-oligo(ethylene glycol), was prepared from diethylamino-terminated polydimethylsiloxane and PEG.. The preparation, physicochem. properties, hydrolytic stability in aqueous media, and use as a neg. working resist are reviewed and discussed. Since PSEG consists of two very flexible components, it is anticipated to show high flexibility. As is well known, DMSO is a hydrophobic and OEG is a hydrophilic materials. Thus, PSEG homolog has alternative hydrophilic/hydrophobic units in the main chain. By changing the hydrophilic/hydrophobic balance, the characteristics of the polymer, especially the solubility in water can be

controlled. For example, PSEG(2/7), where the nos. in parenthesis represent number of OEG unit and DMSO units, resp., was soluble in cold water. With increasing temperature, the solution become turbid, which is well known as a lower critical solution temperature (LCST). The LCST can be controlled by the hydrophilic/hydrophobic balance in the main chain. Therefore, PSEG homologues are anticipated for thermo-sensitive material which shows a rapid response. The PSEGS are anticipated not only as a thermo-sensitive hydrogel but also as **resist** materials because of they are Si-containing polymer. Since the PSEGS show the LCST, they can be developed in water below the LCST. This is big advantage for the **resist** processing in lithog.

IT 218129-37-4P

(preparation, unique properties, and potential use as neg.
resist of)

RN 218129-37-4 HCAPLUS

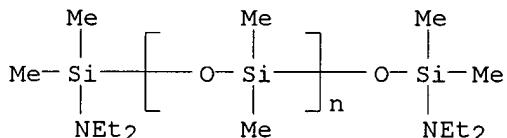
CN Poly[oxy(dimethylsilylene)], α -[(diethylamino)dimethylsilyl]- ω -[(diethylamino)dimethylsilyloxy]-, polymer with
 α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl), block (9CI)
(CA INDEX NAME)

CM 1

CRN 169336-65-6

CMF (C₂ H₆ O Si)_n Cl₂ H₃₂ N₂ O Si₂

CCI PMS

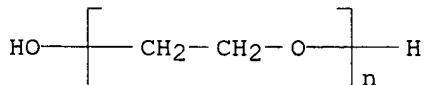


CM 2

CRN 25322-68-3

CMF (C₂ H₄ O)_n H₂ O

CCI PMS



CC 35-0 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37, 38, 74

ST review block polydimethylsiloxane polyoxyethylene prepн property;
resist polysiloxane glycol prepн property reviewIT **Resists**

(neg.-working; preparation, unique properties, and potential use of
poly(siloxane glycol) as)

IT Polysiloxanes, preparation

Polysiloxanes, preparation

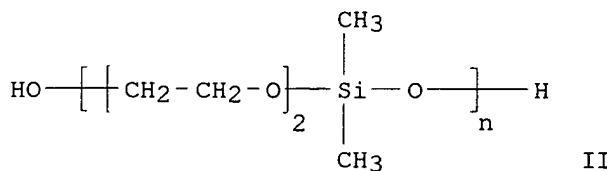
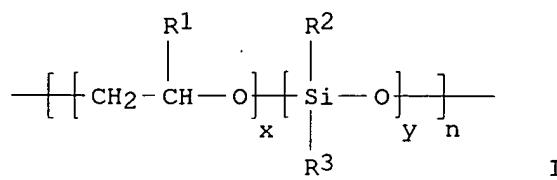
(polyoxyalkylene-, block; preparation, unique properties, and
potential use as neg. **resist** of)

IT Polyoxalkylenes, preparation
 Polyoxalkylenes, preparation
 (polysiloxane-, block; preparation, unique properties, and potential
 use as neg. **resist** of)
 IT 156309-06-7P, Dimethylsilanediol-ethylene oxide block copolymer
218129-37-4P
 (preparation, unique properties, and potential use as neg.
resist of)
 REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L24 ANSWER 4 OF 9 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:350400 HCPLUS
 DOCUMENT NUMBER: 127:5501
 TITLE: Polyoxalkylene-polysiloxanes for
 photoresists having improved
 dimensional stability and their manufacture
 INVENTOR(S): Kato, Masao; Nagasaki, Yukio; Matsukura,
 Fumiaki; Tokuda, Takashi; Aoki, Hidetoshi
 PATENT ASSIGNEE(S): Hokushin Kogyo K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09071658	A2	19970318	JP 1995-229145	1995 0906
JP 2004169041	A2	20040617	JP 2004-6076	2004 0113
JP 2004211098	A2	20040729	JP 2004-34064	2004 0210
PRIORITY APPLN. INFO.:			JP 1995-229145	A3 1995 0906
			JP 2004-6076	A3 2004 0113

GI



AB Polymers comprising alternating oligo oxyalkylene chains and oligo siloxane chains have structural repeating unit I ($\text{R}^1 = \text{C1-5 alkyl, aryl, aralkyl}; \text{R}^2, \text{R}^3 = \text{H, OH, C1-7 alkoxy, phenoxy, C1-10 alkyl, aryl, aralkyl, halogenated alkyl, halogenated aryl, alkylcarbonyloxy, arylcarbonyloxy, CN, sulfonate group, carboxylic acid ester group, ether- or acyl-containing group}; \text{x, y} = 1-10; \text{n} = 1-10,000) and are prepared by the reaction of an oligo oxyalkylene compound with an oligo siloxane compound. Thus bis(diethylamino)dimethylsilane and diethylene glycol were polymerized in THF at room temperature for 24 h to give polymer II ($n = 40$) having number-average mol. weight 6500. The polymers have **resistance** to reactive oxygen plasma etching and improved dimensional stability.$

IT **189369-60-6P**

(polyoxyalkylene-polysiloxane alternating polymers for **photoresists**)

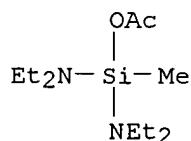
RN 189369-60-6 HCPLUS

CN Ethanol, 2,2'-[1,2-ethanediylbis(oxy)]bis-, polymer with bis(diethylamino)methylsilyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 189369-59-3

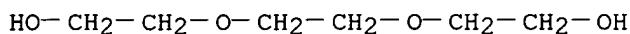
CMF C11 H26 N2 O2 Si



CM 2

CRN 112-27-6

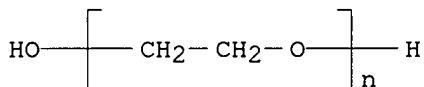
CMF C6 H14 O4



IT 179953-13-0P 189369-43-5P 189369-45-7P
 189369-55-9P 189369-57-1P
 (polyoxyalkylene-polysiloxane alternating polymers for
 photoresists)
 RN 179953-13-0 HCPLUS
 CN 1,3-Disiloxanediamine, N,N,N',N'-tetraethyl-1,1,3,3-tetramethyl-,
 polymer with α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl)
 (9CI) (CA INDEX NAME)

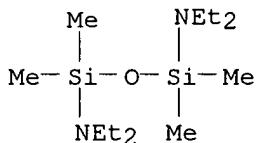
CM 1

CRN 25322-68-3
 CMF (C₂ H₄ O)_n H₂ O
 CCI PMS



CM 2

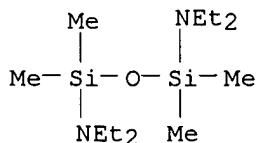
CRN 14759-97-8
 CMF C₁₂ H₃₂ N₂ O Si₂



RN 189369-43-5 HCPLUS
 CN Ethanol, 2,2'-[1,2-ethanediylbis(oxy)]bis-, polymer with
 N,N,N',N'-tetraethyl-1,1,3,3-tetramethyl-1,3-disiloxanediamine
 (9CI) (CA INDEX NAME)

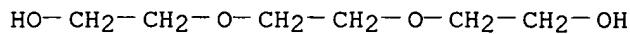
CM 1

CRN 14759-97-8
 CMF C₁₂ H₃₂ N₂ O Si₂



CM 2

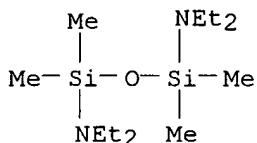
CRN 112-27-6
 CMF C6 H14 O4



RN 189369-45-7 HCPLUS
 CN Ethanol, 2,2'-[oxybis(2,1-ethanediylloxy)]bis-, polymer with
N,N,N',N'-tetraethyl-1,3,3-tetramethyl-1,3-disiloxanediamine
 (9CI) (CA INDEX NAME)

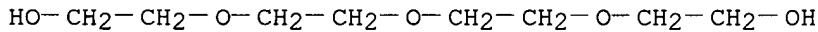
CM 1

CRN 14759-97-8
 CMF C12 H32 N2 O Si2



CM 2

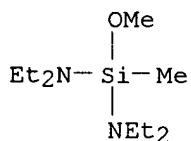
CRN 112-60-7
 CMF C8 H18 O5



RN 189369-55-9 HCPLUS
 CN Ethanol, 2,2'-oxybis-, polymer with *N,N,N',N'*-tetraethyl-1-methoxy-1-methylsilanediamine (9CI) (CA INDEX NAME)

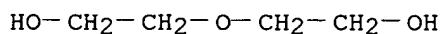
CM 1

CRN 64451-48-5
 CMF C10 H26 N2 O Si



CM 2

CRN 111-46-6
 CMF C4 H10 O3



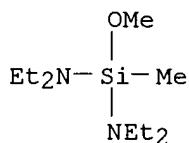
RN 189369-57-1 HCAPLUS

CN Ethanol, 2,2'-[1,2-ethanediylbis(oxy)]bis-, polymer with N,N,N',N'-tetraethyl-1-methoxy-1-methylsilanediamine (9CI) (CA INDEX NAME)

CM 1

CRN 64451-48-5

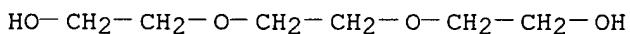
CMF C10 H26 N2 O Si



CM 2

CRN 112-27-6

CMF C6 H14 O4



IC ICM C08G077-46

ICS C08G077-06; G03F007-038; G03F007-039; G03F007-075;
H01L021-027

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 74

ST polyoxyalkylene siloxane alternating photoresist

IT Polysiloxanes, preparation

Polysiloxanes, preparation
(polyoxyalkylene-, alternating; polyoxyalkylene-polysiloxane
alternating polymers for photoresists)

IT Photoresists

(polyoxyalkylene-polysiloxane alternating polymers for
photoresists)

IT Polyoxyalkylenes, preparation

Polyoxyalkylenes, preparation
(polysiloxane-, alternating; polyoxyalkylene-polysiloxane
alternating polymers for photoresists)

IT 189369-47-9P 189369-48-0P 189369-60-6P 189369-61-7P

(polyoxyalkylene-polysiloxane alternating polymers for
photoresists)

IT 26499-73-0P 96141-31-0P 96161-61-4P 102188-13-6P

102244-02-0P 179953-12-9P 179953-13-0P 189369-40-2P

189369-41-3P 189369-42-4P 189369-43-5P 189369-44-6P

189369-45-7P 189369-46-8P 189369-49-1P 189369-50-4P

189369-51-5P 189369-52-6P 189369-53-7P 189369-54-8P

189369-55-9P 189369-56-0P 189369-57-1P

189369-58-2P

(polyoxyalkylene-polysiloxane alternating polymers for photoresists)

L24 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:140370 HCAPLUS
 DOCUMENT NUMBER: 126:226590
 TITLE: Thermally stable polysiloxane release agents
 INVENTOR(S): Chen, Tsang J.; Nielsen, Paul L.; Chen, Jiann-hsing
 PATENT ASSIGNEE(S): Eastman Kodak Company, USA
 SOURCE: U.S., 8 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

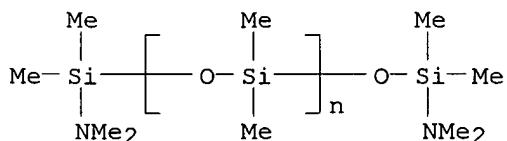
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5604039	A	19970218	US 1996-589666	1996 0122
PRIORITY APPLN. INFO.:			US 1996-589666	1996 0122

AB A release agent consists of a blend .apprx.99% of poly(organosiloxane) fluid and .apprx.1% phenol-functionalized poly(organosiloxane) fluid when used at elevated temps. does not produce insol. or undesirable byproducts or gelation. The release agent is particularly suited for application to a fuser member for fusing toner images to a receiver. Thus a blend of poly(dimethylsiloxane) and 0.5% phenol-terminated poly(dimethylsiloxane) [made by reaction of 2,2-Bis(4-hydroxyphenyl)hexafluoropropene with amino-terminated poly(dimethylsiloxane)] (weight-average mol. weight 9340) was heated at 200°; showing viscosity 60,000, 60,000, and 51,000 cSt after 0, 192, and 576 h.

IT 97969-56-7DP, reaction product with bis(hydroxyphenyl)hexafluoropropene
(thermally stable polysiloxane release agents)

RN 97969-56-7 HCAPLUS

CN Poly[oxy(dimethylsilylene)], α -[(dimethylamino)dimethylsilyl]- ω -[[(dimethylamino)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



IC ICM B32B009-04
 INCL 428447000
 CC 42-10 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 37, 74

ST phenol terminal polydimethylsiloxane blend heat **resistant**
; polydimethylsiloxane blend heat **resistant**; release
agent polydimethylsiloxane toner fuser

IT Heat-**resistant** materials
(containing phenol-terminal polysiloxane; thermally stable
polysiloxane release agents for)

IT 1478-61-1DP, reaction product with amino-terminated
poly(dimethylsiloxane) 1745-81-9DP, o-Allyl phenol, reaction
product with polydimethylsiloxane 31900-57-9DP,
Dimethylsilanediol homopolymer, reaction product with ortho-allyl
phenol 97969-56-7DP, reaction product with
bis(hydroxyphenyl)hexafluoropropene 156118-35-3DP,
Dimethylsilanediol-methylsilanediol copolymer, reaction product
with ortho-allyl phenol 157169-80-7P 188348-81-4P
(thermally stable polysiloxane release agents)

L24 ANSWER 6 OF 9 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:562970 HCPLUS

DOCUMENT NUMBER: 125:198153

TITLE: Epoxy resin compositions and semiconductor
devices with low internal stress and improved
resistance to moisture, thermal shock,
and high temperature

INVENTOR(S): Kobayashi, Hironori; Okuda, Satoshi

PATENT ASSIGNEE(S): Nitto Denko Corp, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

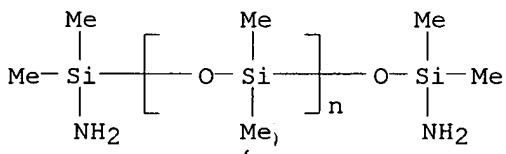
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08188640	A2	19960723	JP 1995-3391	1995 0112
JP 3468900	B2	20031117	JP 1995-3391	1995 0112
PRIORITY APPLN. INFO.:				

AB Semiconductor devices are sealed with the title compns. containing (A)
epoxy resins, (B) novolak phenolic resins, (C) modified resins
obtained by melting and mixing (a) epoxy resins and/or novolak
phenolic resins, (b) Me methacrylate (I)-butadiene (II)-styrene
(III) copolymer with average particle diameter 0.01-5 μm , and (c)
silicone oils, and (D) inorg. fillers. Thus, 20 parts
44.4:25.1:30.4 I-III-II graft copolymer with particle diameter 0.10
 μm and 100 parts o-cresol novolak-type epoxy resin were blended
at 100°, then 43 parts the obtained resin was kneaded at
100° with o-cresol novolak-type epoxy resin 64, phenolic
novolak 50, brominated novolak epoxy resin 10, Sb2O3 8, vitreous
SiO2 500, 2-methylimidazole 2, carnauba wax 6, carbon powder 5,
and γ -glycidoxypropyltrimethoxysilane 4 parts to give a
packaging resin with spiral flow as determined by molding at
175° and 70 kg/cm² for 2 min 72 cm. The resin was molded
at 175° and post-cured at the same temperature to give test

pieces with Young's modulus in flexure 1270 kPa, linear expansion coefficient 1.79 L/°C, and no Al corrosion by pressure cooker test for 200 h.

IT 163002-36-6
 (epoxy resin compns. for semiconductor devices with low internal stress and improved **resistance** to moisture, thermal shock, and high temperature)

RN 163002-36-6 HCAPLUS
 CN Poly[oxy(dimethylsilylene)], α -(aminodimethylsilyl)- ω -[(aminodimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



- IC ICM C08G059-62
 ICS C08L063-00; H01L023-29; H01L023-31
 ICA C08G059-14
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 39, 74, 76
 ST epoxy resin semiconductor device packaging; thermal shock **resistance** epoxy resin semiconductor; methyl methacrylate butadiene styrene graft copolymer; novolak phenolic resin semiconductor device packaging; silicone oil semiconductor device packaging; moisture **resistance** epoxy resin semiconductor
 IT Electronic device packaging
 Heat-**resistant** materials
 Water-**resistant** materials
 (epoxy resin compns. for semiconductor devices with low internal stress and improved **resistance** to moisture, thermal shock, and high temperature)
 IT Siloxanes and Silicones, uses
 (epoxy resin compns. for semiconductor devices with low internal stress and improved **resistance** to moisture, thermal shock, and high temperature)
 IT Epoxy resins, uses
 (epoxy resin compns. for semiconductor devices with low internal stress and improved **resistance** to moisture, thermal shock, and high temperature)
 IT Rubber, synthetic
 (butadiene-Me methacrylate-styrene, graft, epoxy resin compns. for semiconductor devices with low internal stress and improved **resistance** to moisture, thermal shock, and high temperature)
 IT Phenolic resins, uses
 (epoxy, novolak, epoxy resin compns. for semiconductor devices with low internal stress and improved **resistance** to moisture, thermal shock, and high temperature)
 IT Epoxy resins, uses
 (phenolic, novolak, epoxy resin compns. for semiconductor devices with low internal stress and improved **resistance** to moisture, thermal shock, and high temperature)
 IT 31900-57-9D, Dimethylsilanediol homopolymer, α -(aminodimethylsilyl)- ω -[(aminodimethylsilyl)oxy]-terminated
163002-36-6
 (epoxy resin compns. for semiconductor devices with low

internal stress and improved **resistance** to moisture,
thermal shock, and high temperature)

IT 107080-92-2P, Butadiene-methyl methacrylate-styrene graft
copolymer
(rubber; epoxy resin compns. for semiconductor devices with low
internal stress and improved **resistance** to moisture,
thermal shock, and high temperature)

IT 60676-86-0, Vitreous silica
(zeopolymer resin compns. for semiconductor devices with low
internal stress and improved **resistance** to moisture,
thermal shock, and high temperature)

L24 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:414810 HCAPLUS
 DOCUMENT NUMBER: 113:14810
 TITLE: Heat-**resistant photoresist**
 INVENTOR(S): Wada, Keiichiro; Furukawa, Nobuyuki
 PATENT ASSIGNEE(S): Nippon Steel Chemical Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01230631	A2	19890914	JP 1988-55958	1988 0311
PRIORITY APPLN. INFO.:			JP 1988-55958	1988 0311

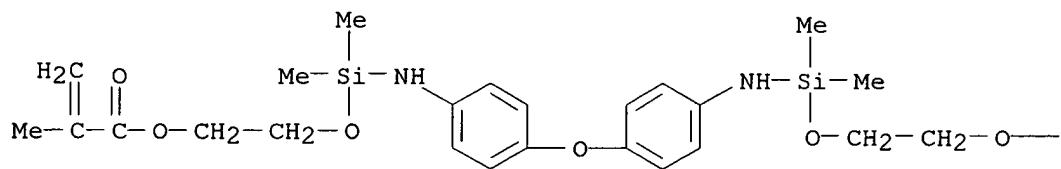
AB A tetracarboxylic anhydride is reacted with a silylated diamine containing photosensitive groups at $\leq 100^\circ$ in an organic solvent. The resultant heat-**resistant** photosensitive polyimide or polyamidoimide is used as a **photoresist** for relief pattern formation during semiconductor device fabrication.

IT 127536-88-3 127536-90-7
 (photoresist composition using, for heat-**resist**
 resist pattern formation)
 RN 127536-88-3 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, oxybis[4,1-phenyleneimino(dimethylsilylene)oxy-2,1-ethanediyl] ester, polymer with 5,5'-carbonylbis[1,3-isobenzofurandione] (9CI) (CA INDEX NAME)

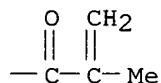
CM 1

CRN 127536-87-2
 CMF C28 H40 N2 O7 Si2

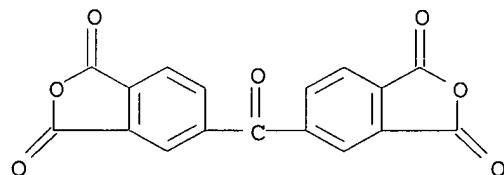
PAGE 1-A



PAGE 1-B



CM 2

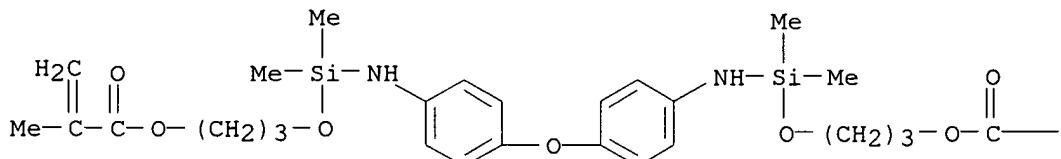
CRN 2421-28-5
CMF C17 H6 O7

RN 127536-90-7 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, oxybis[4,1-phenyleneimino(dimethylsilylene)oxy-3,1-propanediyl] ester, polymer with 5,5'-carbonylbis[1,3-isobenzofurandione] (9CI) (CA INDEX NAME)

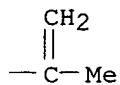
CM 1

CRN 127536-89-4
CMF C30 H44 N2 O7 Si2

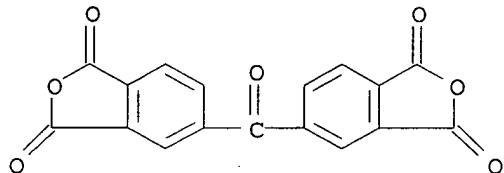
PAGE 1-A



PAGE 1-B



CM 2

CRN 2421-28-5
CMF C17 H6 O7

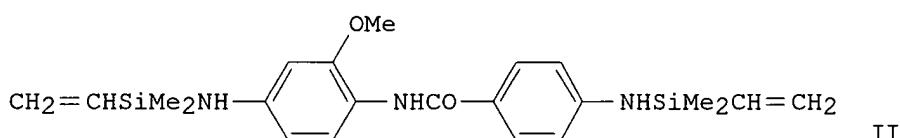
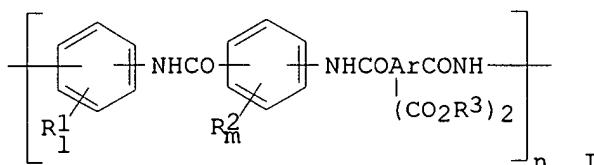
IC ICM C08G073-10
 ICS C08F002-48; C08F299-02; C08G071-02; C08G073-10
 CC 74-5 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST **photoresist** polyimide polyamide silylated;
resist pattern polyimide polyamide
 IT Semiconductor devices
 (fabrication of, heat-**resistant resists**
 for)
 IT Polyimides, uses and miscellaneous
 (**photoresists**, for heat-**resistant** pattern
 formation)
 IT **Resists**
 (photo-, silylated polyimides and polyamidoimides as, for heat-
 resistant pattern formation)
 IT 127536-86-1 127536-88-3 127536-90-7
 127554-77-2 127706-32-5
 (**photoresist** composition using, for heat-**resist**
 resist pattern formation)

L24 ANSWER 8 OF 9 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1990:140836 HCPLUS
 DOCUMENT NUMBER: 112:140836
 TITLE: Heat-**resistant** photocurable polyamic
 acid materials with low thermal expansion
 INVENTOR(S): Wada, Keiichiro; Furukawa, Nobuyuki; Watanabe,
 Takashi
 PATENT ASSIGNEE(S): Nippon Steel Chemical Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01249831	A2	19891005	JP 1988-76384	1988 0331
PRIORITY APPLN. INFO.:			JP 1988-76384	1988 0331

GI



AB Title materials useful as insulators for printed circuit boards contain polymers with main units I (Ar = aromatic group; R1-2 = halo, organic group; R3 = Si-containing group polymerizable or crosslinkable by radiation; n ≥ 1; l, m = 0-4). A solution of 39.6 g vinylsilane II in AcNMe₂ was treated with 21.8 g pyromellitic dianhydride at 40° for 5 h to give a viscous liquid which was mixed with 2.0 g Calcon diazide to give a photocurable solution which gave a cured film having thermal expansion coefficient 0.4 + 10-5/°C and 24-h water absorption 2.7%. A Si wafer was spin coated with the solution, dried, irradiated with UV light through a mask, immersed in MeCN-AcNMe₂ mixture, washed, and heated 5 min at 80°, 30 min at 150°, and 15 min at 360° to form a pattern with thermal decomposition initiation temperature 430°, vs. no pattern formation with bis[4-[(methacryloxypropyl)dimethylsilyl]amino]phenyl] ether instead of II.

IT 125929-97-7P 125929-99-9P
(preparation of photocurable, for circuit board insulator)

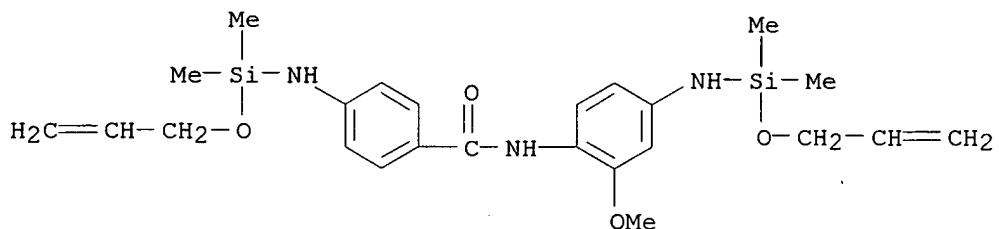
RN 125929-97-7 HCPLUS

CN Benzamide, 4-[[dimethyl(2-propenoxy)silyl]amino]-N-[4-[[dimethyl(2-propenoxy)silyl]amino]-2-methoxyphenyl]-, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX NAME)

CM 1

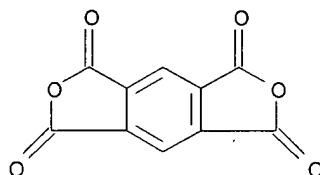
CRN 125929-96-6

CMF C24 H35 N3 O4 Si2



CM 2

CRN 89-32-7
CMF C10 H2 06



RN 125929-99-9 HCAPLUS

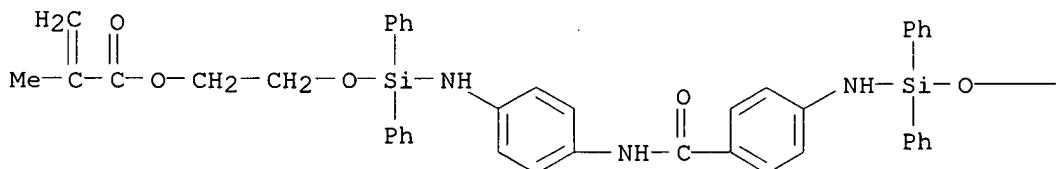
CN 2-Propenoic acid, 2-methyl-, 2-[[[[4-[[4-[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]diphenylsilyl]amino]benzoyl]amino]phenyl]amino]diphenylsilyl]oxy]ethyl ester, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX NAME)

CM 1

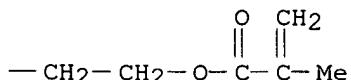
CRN 125929-98-8

CMF C49 H49 N3 O7 Si2

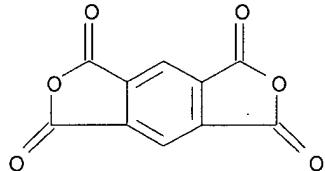
PAGE 1-A



PAGE 1-B



CM 2

CRN 89-32-7
CMF C10 H2 O6

IC ICM C08G073-10
ICS C08G073-10
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 74, 76
ST polyamic acid photocuring insulator; elec insulator printed circuit; polyimide polyamide photocuring insulator; thermal expansion elec insulator; circuit board insulator photocuring; crosslinking photochem elec insulator; **resist** photo circuit board
IT Heat-**resistant** materials
(polyamide-polyimides, as insulators for circuit boards)
IT 125929-95-5P 125929-97-7P 125929-99-9P
125930-01-0P 125930-02-1P
(preparation of photocurable, for circuit board insulator)

L24 ANSWER 9 OF 9 HCPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1988:229670 HCPLUS
DOCUMENT NUMBER: 108:229670
TITLE: Polyamides for heat-**resistant**
photosensitive materials
INVENTOR(S): Imai, Yoshio; Ota, Takayuki
PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Co., Ltd.,
Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 62275129	A2	19871130	JP 1986-118590	1986
				0523
PRIORITY APPLN. INFO.:			JP 1986-118590	1986
				0523

AB The title polymers are prepared from tetracarboxylic dianhydrides and diamines RSiR1R2NHZNSiR3R4R5 (Z = divalent organic group; R-R5 = aliphatic or aromatic group; ≥1 of R-R5 contains light- or radiation-polymerizable double bond). Polymerizing 10 mmol N,N'-bis(methacryloxydimethylsilyl)-p,p'-diaminodiphenyl ether and

10 mmol pyromellitic dianhydride in N-methyl-2-pyrrolidone for 5 h gave a polyamide solution which was mixed with Michler's ketone, spin coated on glass, dried, cured with UV light through a mask, developed, and heated 30 min at 350° to give a heat-resistant relief image.

IT 114690-28-7P

(preparation of photocurable, for heat-resistant relief images)

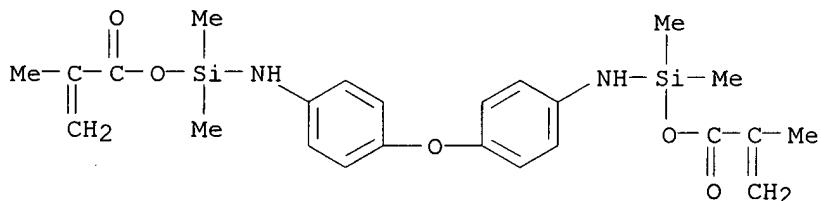
RN 114690-28-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxybis[4,1-phenyleneimino(dimethylsilylene)] ester, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX NAME)

CM 1

CRN 114690-27-6

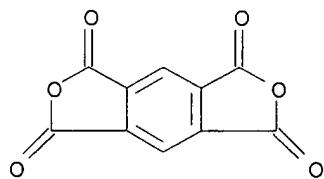
CMF C24 H32 N2 O5 Si2



CM 2

CRN 89-32-7

CMF C10 H2 O6



IC ICM C08G073-10

ICS C08F299-02; C08G073-10; G03C001-68; G03C001-71

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37

ST heat resistance polyamide methacrylate; polyamide methacryloxsilylamine photocuring; silylamine methacryloxy polyamide photocuring; pyromellitic methacryloxsilylamine polyamide; amine methacryloxsilyl polyamide; resist photo methacryloxsilylamine polyamide; crosslinking photo polyamide methacrylate

IT Polyamides, uses and miscellaneous (photoresists, methacryloxsilyl group-containing)

IT Resists (photo-, bis[[(methacryloxydimethylsilyl)amino]phenyl]

ether-pyromellitic dianhydride copolymers for)
IT **114690-28-7P**
(preparation of photocurable, for heat-resistant relief
images)